What is claimed is:

1. A switched mode power converter that is arranged to provide an output signal to a load circuit, the switched mode power converter comprising:

an inductor;

a switching circuit that is coupled to the inductor and arranged to periodically energize the inductor in response to a control signal, wherein the switching circuit is operated in: a closed circuit position during a first operating phase of the converter, and an open circuit position during a second operating phase of the converter;

a sense circuit that is arranged to provide a sense signal that is related to a current in the inductor during a selected operating phase of the converter, wherein the selected operating phase corresponds to one of the first and second operating phases of the converter, and wherein a non-selected operating phase of the converter corresponds to the other of the first and second operating phases of the converter;

a feedback circuit that is arranged to provide a feedback signal in response to an output signal of the converter;

a comparator circuit that is arranged to assert a start signal when the feedback signal and the sense signal are approximately equal during the selected operating phase of the converter; and

a one-shot circuit that is arranged to initiate the control signal when the start signal is asserted such that the control signal has a variable pulse-width during the non-selected operating phase of the converter.

2. The switched mode power converter of claim 1, the switching circuit comprising at least one of: an n-type FET device, a p-type FET device, an n-type MOS device, and a p-type MOS device.

3. The switched mode power converter of claim 1, wherein the sense circuit comprising: a resistor that is coupled between a reference terminal a sense terminal, and a current sense circuit that is coupled to the resistor circuit, wherein the reference terminal is arranged to receive a reference voltage (V_{REF}), the resistor has a corresponding

resistance value (R_{SNS}), and the current sense circuit is arranged to provide a sense current (I_{SNS}) to the resistor such that the sense signal (V_X) corresponds to the difference between V_{REF} and $I_{SNS}*R_{SNS}$.

4. The switched mode power converter of claim 1, the sense circuit comprising: a first resistor that is coupled between the switching circuit and a supply terminal, a trans-conductance circuit that is arranged to provide a sense current to a sense terminal in response to a voltage across the first resistor, and a second resistor that is coupled between a reference voltage and the sense terminal such that the sense signal corresponds to a voltage associated with the sense terminal.

5. The switched mode power converter of claim 4, wherein the first resistor corresponds to at least one of: a metal interconnect material that is coupled to the switching circuit, a resistive material that is coupled to the switching circuit, and an on-resistance that is associated with the switching circuit.

6. The switched mode power converter of claim 3, wherein the switching circuit is arranged to couple current from the inductor to the first resistor during the first operating phase of the converter.

7. The switched mode power converter of claim 3, further comprising a diode that is arranged to couple current through the first resistor and the inductor during the second operating phase of the converter.

8. The switched mode power converter of claim 3, wherein the reference voltage is provided by a band-gap circuit.

9. The switched mode power converter of claim 1, wherein the feedback circuit is arranged such that the feedback signal is: equal to the output signal, an offset version of the output signal, a gain scaled version of the output signal, and a divided version of the output signal.

10. The switched mode power converter of claim 1, wherein the feedback circuit corresponds to at least one of: a direct connection, a unity gain amplifier circuit, an amplifier circuit with a gain of less than one, an amplifier circuit with a gain of greater than one, a resistor divider circuit, a capacitor divider circuit, and a stacked diode circuit.

11. The switched mode power converter of claim 1, wherein the one-shot circuit comprises at least one of: an RS-type flip-flop circuit, a delay circuit, and a ramp generator circuit.

12. The switched mode power converter of claim 1, wherein the one-shot circuit comprises a ramp generator circuit that has an adjustable ramp rate that is variable in response to a bias signal.

13. The switching mode power converter of claim 12, further comprising a PLL circuit that is arranged to bias signal based on a comparison between a reference frequency and a feedback frequency that is associated with the control signal.

14. The switching mode power converter of claim 13, wherein the PLL circuit is arranged to phase align the reference frequency and the feedback frequency.

15. The switching mode power converter of claim 13, wherein the PLL circuit comprises a trans-conductance circuit that is arranged to provide at least a portion of the biasing signal.

16. The switched mode power converter of claim 15, further comprising a current source that is arranged to provide another portion of the biasing signal.

17. The switched mode power converter of claim 16, wherein the current source is arranged such that the other portion of the biasing signal varies proportional to changes in a supply voltage.

18. The switched mode power converter of claim 16, wherein the current source is arranged to set a minimum operating frequency for the PLL circuit.

19. The switched mode power converter of claim 15, further comprising a resistor that is arranged to provide another portion of the biasing signal.

20. The switched mode power converter of claim 15, wherein the trans-conductance circuit has a trans-conductance parameter (g_m) that varies proportional to changes in a supply voltage.

21. The switched mode power converter of claim 1, further comprising a diode, wherein the switching circuit is arranged to couple energy from an input terminal to the inductor such that the inductor is charged during the first operating phase of the converter, and wherein the diode is arranged to provide a conduction path for the inductor during the second operating phase of the converter.

22. The switched mode power converter of claim 1, further comprising a diode that is arranged to permit current to flow to the load circuit from the inductor, wherein the switching circuit is arranged to couple the inductor between an input terminal and a ground terminal such that the inductor is charged during the first operating phase of the converter.

23. A switched mode power converter that is arranged to provide an output signal to a load circuit, the switched mode power converter comprising:

an inductor;

a switching means for periodically energizing the inductor in response to a control signal, wherein the switching means is operated in: a closed circuit position during a first operating phase of the converter, and an open circuit position during a second operating phase of the converter;

a sense means for providing a sense signal that is related to a current in the inductor during a selected operating phase of the converter, wherein the selected

operating phase corresponds to one of the first and second operating phases of the converter, and wherein a non-selected operating phase of the converter corresponds to the other of the first and second operating phases of the converter;

a comparison means for asserting a start signal when an output signal associated with the load circuit reaches a threshold during the selected operating phase of the converter; and

a pulse means for initiating the control signal when the start signal is asserted such that the control signal has a variable pulse-width during the non-selected operating phase of the converter.

24. The switched mode power converter of claim 23, further comprising a phase-locked-loop means for adjusting a pulse-width associated with control signal during the selected operating phase of the converter.

25. A method for adjusting pulse widths associated with a control signal in a switched mode power converter, the method comprising:

periodically energizing an inductor with a switching circuit that is responsive to the control signal, wherein the switching circuit is operated in: a closed circuit position during a first operating phase of the converter, and an open circuit position during a second operating phase of the converter;

providing a sense signal that is related to a current in the inductor during a selected operating phase of the converter, wherein the selected operating corresponds to one of the first and second operating phases of the converter, and wherein a non-selected operating phase of the converter corresponds to the other of the first and second operating phases of the converter;

asserting a start signal when an output signal associated with a load circuit reaches a threshold during the selected operating phase of the converter; and

initiating the control signal when the start signal is asserted such that the control signal has a variable pulse-width during the non-selected operating phase of the converter.

26. The method of claim 25, further comprising adjusting a pulse-width associated with control signal during the selected operating phase of the converter with a phase locked loop.